REMARKS

Claims 1-28 are now presented for examination. Claims 1, 9, 19 and 20 have been amended. No new matter has been added. As an initial matter, Applicants' undersigned representative thanks the Examiner for taking the time on January 3, 2005 to telephone and inform the undersigned that examination of the subject Application has been assigned to him.

Claims 1, 9 and 19 are independent.

In paragraph 2 of the Office Action, Claims 1-27 are rejected under 35 U.S.C. § 102(e) as anticipated by Robert et al. (U.S. Patent 6,104,712). Applicants believe that Robert et al. does not teach or suggest Applicants' claimed invention. Features of amended independent Claim 1 include "*geographically* predefined coverage zones" which are stored in a storage unit of "at least one *stationary* network switch," the storage of "a global position route table, the global position route table mapping the coverage zone area range data to an interface to which the corresponding coverage zone can be reached," and determining at least a portion of a network path to the device by "evaluating the global position route table" stored in the storage unit. None of these features are taught or suggested by Robert.

Applicant's invention advantageously provides a method and system which uses a stationary backbone network to efficient route of data packets even though at least one of the end points is mobile and can move, for example, from cell to cell. By storing coverage zone area range data and a global position route table, e.g. coordinate data for a geographically predefined (fixed) area of coverage of a network edge router, a relatively static routing table can be built and maintained. This is the case because the route table is based on non-mobile routers and their predefined geographic areas of coverage within the transport backbone of the network.

Applicants' routing table for data transport through the backbone network is not based on the mobile devices or the location of the mobile device. In other words, the present invention establishes the packet routing table based on fixed predefined geographic zones of coverage, encapsulating and routing packets to an end switch which supports a fixed geographic zone of coverage for ultimate wireless transmission to the mobile device. See, for example, specification at page 19, line 7 to page 20, line 9. In accordance with Applicants' invention, the route for a packet destined for a mobile device can be quickly determined through a simple table look-up based on the geographic zone the mobile device is in. Accordingly, the only reasonably dynamic data within Applicants' network is the location of the mobile device. This arrangement advantageously minimizes the processing power requirements of the mobile device, allowing known mobile devices to be used in conjunction with the present invention with only a minimum of modification necessary. Similarly, backbone stationary switches need not be designed with extraordinary processing capabilities in order to support the routing of traffic to mobile nodes.

In contrast to Applicants' invention as recited in amended independent Claim 1, Robert et al. is directed to a communication network having *no traditional wireless network backbone.* See Abstract. Robert et al. provides a network primarily composed of mobile devices in which the mobile devices themselves act as network switches, passing traffic from one mobile switch to another until the data has reached the terminating mobile node. See, e.g., col. 2, lines 22-40 and col. 5, lines 8-13. Because the switches are mobile and move from geographic place to geographic place in a manner that is not predefined, Robert's routing table is highly dynamic and constantly changes. The continuous nature of Robert et al.'s routing table updates adds inefficient overhead to the system both in terms of processing resources and bandwidth.

Although, as pointed out by the Examiner, Robert et al. provides for stationary databases storing certain aspects of routing information, Robert et al. does not teach or suggest network switches at the periphery of the stationary network backbone and does not teach or suggest any method or system which provides a reasonably static routing table through the storage of "a global position route table" which maps "coverage zone area range data to an interface which the corresponding geographically predetermined coverage zone can be reached" and in which "coverage zone area range data . . . defin[es] the geographic scope of coverage supported by each of the at least one stationary network switches supporting a geographically predefined coverage zone" as recited by Applicants in amended Claim 1.

Rather, in contrast to Applicants' invention, the database of Robert et al. does not route packets and merely stores a mapping of mobile node global position data with a mobile node identifier. Col. 19, lines 1-10. During transmission, Robert et al.'s mobile node performs a database lookup to determine the location of the intended recipient and computes the route thereto. Col. 19, lines 11-18. This leads to at least two significant distinctions between Applicants' claimed invention and the teachings of Robert et al.

First, Robert et al's database stores a mapping of information that is completely different from Applicant's global position route table. Applicants' global position route table stores data corresponding to the zone of coverage for stationary network switches and the interface to use to route data thereto. Applicants' global position route table does not store the location of the mobile device (because Applicants' routing decisions in the network backbone are based on fixed zones of coverage). Rather, the location of the destination mobile device is used as a basis for evaluating the global position route table to determine the next hop (as opposed to storing the

location of the mobile device). Robert et al.'s database stores the location of the mobile device, thereby requiring frequent updates, because Robert et al.'s backbone is the mobile devices. Second, it is the stationary network switches themselves in Applicant's claimed invention that use stored the global route table, while Robert et al. teaches that the databases 106 are used *by the mobile devices* to develop the route to the next hop mobile device. Applicants' mobile devices need only communicate with a supporting radio edge router and do not need to compile elaborate routing information.

In addition, paragraph 5 of the Office Action states that Robert et al.'s "routing MAN . . . traverses a predetermined geographical area collecting . . . collecting network information to be disseminated to individual MANs, *so they can determine end-to-end routes independently*" (emphasis added) for the proposition that Applicants' coverage zone area range data is taught by this reference. However, while Applicants agree with the description of Robert et al.'s routing MAN, Applicants respectfully assert that this routing MAN bears no relation to Applicants' claimed invention. First, while Robert et al.'s routing MAN may traverse a predetermined zone, in contrast to Applicant's claimed invention, there is no teaching in Robert et al. that data corresponding to the area covered by the zone, i.e, x, y and z coordinate ranges, is stored anywhere or is used by the backbone to make routing decisions (see Robert et al. Col 5, lines 34-45). Rather, Robert et al.'s mobile devices access the routing MAN as something of a moving database which can work in conjunction with the stationary database to facilitate the *mobile device's* determination of a route to the destination.

Put simply, unlike Applicants' invention, Robert et al. clearly does not teach or suggest using "stationary network switches" which support a "geographically predefined geographic

scope of coverage," storing Applicants' "global position route table" or "evaluating the global position route table to determine at least a portion of a network path to the device based on the location data and *the coverage zone area range data*". Because Robert et al. does not teach the storage of coverage zone area range data for network switches, Robert et al. does not teach or suggest determining any portion of a network path based on the location data for the mobile device "and the geographically predefined coverage zone" as recited in amended independent Claim 1.

Applicants believe that amended Claim 1 is patentable for at least these reasons and respectfully request the withdrawal of the rejection of this claim.

Amended independent Claim 9 is directed toward a system for transmitting data across a communication network from a terminal to a mobile device. As discussed above with respect to Claim 1, Applicants respectfully assert that Robert et al. does not teach or suggest the use of "stationary" routers as recited in Claim 9. Rather, the routing devices of Robert et al. are the mobile nodes themselves. The only truly stationary device described by Robert et al. is a regional database node 106, which does not itself route packets. Rather, regional database node 106 is described as a *repository* of location information and corresponding identifiers for mobile nodes in which the mobile nodes use Robert et al.'s regional database node 106 to *look up* routing information (col. 18, line 65 to col. 19, line 18). In contrast, as recited in Claim 9, it is Applicants' stationary first router and second router that actually perform the routing function. Applicants believe Claim 9 is patentable for at least this reason.

In addition, Robert et. al. does not teach Applicants' "stationary first router supporting a predefined coverage zone" or Applicants' "stationary second router" having a "storage unit

storing coverage zone area range data of each of the first routers in a table mapping the coverage zone area range data to an interface to which the corresponding geographically predefined coverage zone can be reached." As described above with respect to Claim 1, Robert et al.'s database does not route packets and merely stores a mapping of mobile node global position data with a mobile node identifier. No fixed geographic scope of coverage *for the routing devices* is taught or suggested by Robert et al. Likewise and as a result, Robert et al. simply can not teach or suggest that the path to the destination mobile device is determined based on the corresponding coverage zone area range data. Applicants believe Claim 9 is patentable for at least this additional reason.

Accordingly, because amended Claim 9 is believed patentable, the withdrawal of the rejection of this claim is earnestly solicited.

Claim 19 was also rejected as anticipated by Robert et al. Amended independent Claim 19 is directed to a "stationary network switch". As with the system of Claim 9, this "stationary network switch" receives "coverage zone area range data" from other network switches which "support[] a *geographically predefined* coverage zone within the communication network." It is this "coverage zone area range data" that "defin[es] the geographic scope of coverage for mobile devices supported by each respective network switch supporting a geographically predefined coverage zone." As with the system of Claim 9, Applicants' claimed switch also includes "a storage unit storing a first table mapping the coverage zone area range data to a communication interface to which the corresponding geographically predefined coverage zone can be reached". As discussed above with respect to amended Claims 1 and 9, Robert et al. does not teach or suggest any device that includes these features and certainly does not teach a "switch" that

includes these features. For these reasons, Applicants believe Claim 19 is patentable and respectfully requests the withdrawal of the rejection of this claim.

Claim 28 was rejected in paragraph 4 of the Office Action under 35 U.S.C. § 103(a) as obvious from Robert et al. in view of U.S. Patent No. 6,496,189 (Yaron et al.). Claim 28 is believed patentable by virtue of its dependency on independent Claim 19, whose patentability is discussed above.

With respect to Claims 3, 6, 11, 16, 21 and 25, based on the comments on Page 16 of the Office Action, it appears to Applicants that the use of routing domains as described in the Application and as recited in these claims is being misunderstood. The comments on Page 16 of the Office Action describe little more than the creation of route and the use of a packet route field as used by Robert et al. However, these portions of Robert et al. relate to defining and establishing a route through the network, and do not teach or suggest that the location of a mobile device can or should be defined by its inclusion within a "routing domain". In general, a routing domain is an autonomous subset of a network which makes its own routing decisions. Applicants attach a web page printout which shows multiple versions of the generally understood definition of "routing domain". As an example, routing protocols such as the Border Gateway Protocol (BGP) in which network subsets are connected by gateways employ routing domains. Routing decisions are made separately within each network subset and are not shared across gateways.

Robert does not in any way teach or suggest that the location of a MAN is defined by its inclusion within a routing domain or that routing domains can or should be used in conjunction with a network supporting mobile devices to identify the location of the devices. Rather, Robert

et al's MANs are established as autonomous units within an area defined by an address. This address is used to establish a route to or through the portion of the network in which the MAN exists. In other words, Robert et al.'s mobile devices themselves establish the routes through the network and are not defined by existence in an identified routing domain. In contrast, as recited by Applicants in Claims 3, 6, 11, 16, 21 and 25, the location of *mobile devices* in Applicants' system can be defined by a routing domain. See, for example, FIGS 10-15 and accompanying description in Applicants' specification. Accordingly, Claims 3, 6, 11, 16, 21 and 25 are patentable over Robert et al.

Claims 2-8, 10-18 and 20-28 are each dependent either directly or indirectly from one or another of independent Claims 1, 9 and 19, discussed above. These claims recite additional limitations which, in conformity with the features of their corresponding independent claim, are not disclosed or suggested by the art of record. The dependent claims are therefore believed patentable. However, the individual reconsideration of the patentability of each claim on it own merits is respectfully requested.

For all of the above reasons, the claim objections are believed to have been overcome placing Claims 1-28 in condition for allowance, and reconsideration and allowance thereof is respectfully requested.

The Examiner is encouraged to telephone the undersigned to discuss any matter that would expedite allowance of the present application.

Respectfully submitted,

Date: February 3, 2005

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Web

Definitions of **Routing domain** on the Web:

A set of routers exchanging routing information within an administrative domain.
www.red.net/glossary/r.php

A set of routers exchanging routing information within an administrative domain. See also: Administrative Domain, router.
www.direct.bigpond.com/glossaryL-Z.cfm

A set of end systems and intermediate systems which operate the same routing protocols and procedures and which are wholly contained within a single administrative domain. A routing domain may be divided into multiple routing subdomains.
www.eurocontrol.int/eatmp/glossary/terms/terms-18.htm

A set of routers exchanging routing information within an administrative domain. See also Administrative Domain, router.
homepages.bw.edu/~kweiss/glossary/r.html